

WHAT IS CLAIMED IS:

1. An isolated and purified nucleic acid binding protein having appended amino-terminally thereto an extension of amino acid residues comprising a plurality of acidic amino acid residues.
2. The protein according to claim 1, wherein said protein is a DNA binding protein.
3. The protein according to claim 1, wherein said protein is an RNA binding protein.
4. The protein according to claim 1, wherein said acidic amino acid residues dimerize with the basic region of a cellular DNA binding protein to inhibit the binding of said protein to DNA.
5. The protein according to claim 1, wherein said acidic amino acid residues dimerize with the basic region of a cellular RNA binding protein to inhibit the binding of said protein to RNA.
6. The protein according to claim 4, said protein being a dominant negative to a naturally occurring cellular protein.
7. The protein according to claim 2, wherein said protein is a bZIP protein.
8. The protein according to claim 7, wherein said bZIP protein is selected from the group consisting of Fos, Jun, GCN4, VBP, GBF, opaque, CREB, C/EBP, PAR, ATF2 and plant G-box protein.
9. The protein according to claim 2, wherein said protein is a bHLH protein.

10. The protein according to claim 8, wherein said bHLH protein is selected from the group consisting of Myc, Max, and Mad.

11. The protein according to claims 1, 2, or 3, wherein the acidic amino acid residues are glutamic acid or aspartic acid.

12. The protein according to claim 1, 2, or 3, wherein said acidic extension comprises from two to one-hundred amino acid residues.

13. The protein according to claim 12, wherein said acidic extension comprises from three to fifty amino acid residues.

14. The protein according to claim 13, wherein said acidic extension comprises from four to thirty amino acid residues.

15. The protein according to claim 14, wherein said acidic extension comprises twenty-eight amino acid residues.

16. An isolated DNA molecule consisting essentially of the sequence as shown in SEQ ID NOS:1-52.

17. An isolated DNA molecule encoding a nucleic acid binding protein having appended N-terminally thereto a plurality of acidic amino acid residues.

18. A plasmid vector construct comprising the DNA molecule according to claim 16 or claim 17, a promoter, a transcription initiation site, a transcription termination site, an origin of replication site, and a polyadenylation site, for expression in eukaryotic cells.

19. The vector according to claim 18, wherein said eukaryotic cells are selected from the group consisting of plant cells, yeast cells, and mammalian cells.

20. A plasmid vector construct comprising the DNA molecule according to claim 16 or claim 17, a promoter, a transcription initiation site and a transcription termination site, for expression in prokaryotic cells.

21. The construct according to claim 18, wherein said promoter is tissue specific.

22. The DNA molecule according to claim 16 or 17, wherein said nucleic acid binding protein is a DNA binding protein.

23. A method for producing a dominant negative nucleic acid binding protein for inhibiting cell growth and proliferation, comprising:

(a) preparing a sequence of amino acids, wherein at least one amino acid of the sequence is acidic to produce an acidic amino acid extension; and

(b) appending said acidic extension to the N-terminus of a multimerization or a dimerization domain of said nucleic acid binding protein to create said dominant negative protein.

24. The method according to claim 23, wherein said dominant negative protein is a DNA binding protein.

25. The method according to claim 23, wherein said acidic extension comprises from two to one-hundred amino acids.

26. The method according to claim 25, wherein said acidic extension comprises from three to fifty amino acids.

27. The method according to claim 26, wherein said acidic extension comprises from four to thirty amino acids.

28. A method of controlling cell growth by inhibiting the function of a naturally occurring cellular protein, comprising:

(a) introducing into a cell the construct according to claim 18 under conditions allowing for the expression of said acidically extended nucleic acid binding protein;

(b) inhibiting the binding of a cognate naturally occurring cellular nucleic acid binding protein to its target nucleic acid sequence by multimeric or dimeric complexation between said expressed acidically extended nucleic acid binding protein and said naturally occurring cellular protein.